Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)
	)
Service Rules for the 698-746, 747-762 and 777-792 MHz Bands	) WT Docket No. 06-150
	)
	)
Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band	) PS Docket No. 06-229
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	)
Amendment of Part 90 of the Commission's Rules	) WP Docket No. 07-100

COMMENTS OF THE CITY OF PORT ANGELES, WASHINGTON, IN RESPONSE TO FIFTH NOTICE OF PROPOSED RULEMAKING

The City of Port Angeles, Washington hereby submits the following comments in response to the Commission's Fifth Notice of Proposed Rulemaking, FCC 12-61, released June 13, 2011 ("Fourth NPRM"), in the above-captioned proceedings in which the Commission is seeking comments on a wide variety of technical issues and proposed rules for broadband deployment in the 4.9 GHz MHz band public safety spectrum.

The City of Port Angeles is located in northern portion of the Olympic Peninsula. The city is strategically located at the entrance to Olympic National Park. Port Angeles Harbor provides a gateway to shipping traffic from around the world, and border crossing access to and from Canada is provided through daily commercial ferry service between the city and Victoria, Canada.

Importantly, for purposes of these comments, the city is in the final stages of implementing a citywide 4.9 GHz wireless network to meet the mobile data needs of the public safety community. This project, which has been planned and implemented over a six-year period, is partially funded by a federal Broadband Technology Opportunities Program (BTOP) grant

administered by the U.S. Department of Commerce. (The city is a subgrantee of the Northwest Open Access Network, or NoaNet.) The city's wireless project will provide access to all commercial and residential areas of the city. To date, an estimated $4.5 million of local matching and federal stimulus monies have been invested to build and place this unique network into operation. Attached to this reply is a summary description of the Port Angeles citywide broadband project that provides details on the magnitude and functionality of the network.

Introduction and Summary of the City's Position

The notice provides an overview regarding the Commission's understanding of the use of the 4.9 GHz public safety band along with a discussion of alternatives for use of the entire band in the future. While Port Angeles appreciates and is respectful of the Commission's analysis and recommendations, we believe that many of the options addressed in the NPRM, if adopted, will encourage the commercial development of the 4.9 GHz band at the expense of public safety users—and that, once commercially developed, the opportunity for public safety users to reclaim the spectrum to meet its future needs will be lost. Some of the recommendations, such as the registration of all base or fixed facilities or the fixed assignment of operating channels, are not consistent with the current operation of our 4.9 GHz public safety mobile data network. Further, based on our citywide implementation (which will use the entire 4.9 GHz band) and the implementations of other public safety users in Clallam County, Washington, we seriously question the viability of sharing the 4.9 GHz public safety spectrum with non-public safety users as direct licensees of this spectrum. We do support the Commission's consideration of granting licenses for aeronautical mobile use of the band, for public safety users.

Comments Relating to Commission's Notice

In the section entitled "Coordination" (¶19-24), the Commission examines the pros and cons of coordinating users within a given geographical area. Much of the discussion focuses on fixed sites, and more specifically point-to-point and point-to-multipoint links. The initial applications proposed for the 4.9 GHz band were the deployment of high-speed mobile and fixed portable applications. By their very nature, mobile and fixed portable applications require coordination on an area-wide rather than a site-by-site basis. Current technology more or less limits the path length for point-to-point links to the power levels and the beamwidth of fixed site antennas. Clearly, moving forward, there will be a wide variety of applications and technologies for this spectrum. The City of Port Angeles has chosen to essentially blanket our entire jurisdiction with 4.9 GHz access points to support a wide range of fixed, fixed portable, and mobile clients for public safety users. Within our jurisdiction and somewhat beyond our boundaries, there is more or less saturation of the spectrum. We presume that other communities in a similar situation may choose the 4.9 GHz mobile option for deployment, as well. We therefore recommend that, if local coordination committees are established, they have wide latitude to deal with a blanketing deployment and, at the same time, develop a methodology to support and protect the deployment of 4.9 GHz technology for point-to-point applications. We would note, however, that the Commission, under Part 101, has a long-established procedure for implementing high-capacity point-to-point links in both the 6 GHz and 11 GHz bands. Further, a review of the commercial literature provides technical information and strategies for implementing low-cost 5.8 GHz integrated point-to-point unlicensed microwave technology.

Under a section entitled "Registration and database approach" (¶25), the Commission examines the merit of creating a comprehensive database of permanent fixed point-to-point, point-to-multipoint, and base-to-mobile sites, and suggests that all such facilities would need to

be entered into the database. We believe that such registration for certain public safety applications is unnecessary and, in fact, unduly burdensome for the licensee. As noted in our attached design document, the first phase of the Port Angeles 4.9 GHz public safety network—which covers just eight square miles—has in excess of 240 fixed base station access points permanently mounted on lighting standards and utility poles throughout the city. Further, our network does not employee static channel allocations within the 50 MHz bandwidth; rather, all devices are dynamically controlled by software at the central network management center, which continuously monitors the performance and loading of the network and automatically reconfigures the network to address real-time user requirements. In essence, the Port Angeles public safety network is active (as per the terms of our license) and potentially using the entire 50 MHz band throughout the city at all times.

In the section entitled "Expanding Eligibility and Alternative Licensing" (¶42-45), the Commission examines the impact of expanding the eligibility of directly licensing non-public safety users. Comment is requested on the feasibility of public safety sharing this unique band with other, non-public safety users. While the emphasis is on retaining public safety as the primary licensee, consideration appears to be given to a secondary license for non-public safety users. With regard to the Port Angeles 4.9 GHz broadband wireless public safety network, we consider this approach to be unworkable. During the planning and design of the network, we examined the feasibility of sharing the 2.4 GHz unlicensed band between commercial users and public safety. Our public safety needs dictate a robust network that can reliably transport real-time, high-quality, multi-site video to our mobile forces at an incident with total capacity 24/7 without the risk of interference or degradation from other users. To secure a network that addresses our public safety requirements, the city invested substantial additional funds to develop and implement a discrete wireless network operating in the 4.9 GHz band. This

decision was made in part due to the fact that the 4.9 GHz band was initially established exclusively for public safety agencies. Based on our substantial investment in the 4.9 GHz technology and our long-term public safety deployment goals, we see no practical opportunity within the City of Port Angeles or in the neighboring communities, many of which are either currently a part of or are proposing to join our network, for use of the spectrum by non-public safety entities in this region.

In the section entitled "Aeronautical mobile use" (¶60-63), the Commission proposes to permit, without a waiver process, aeronautical mobile use of the 4.9 GHz band "on a secondary, non-interference basis to 4.9 GHz terrestrial services and subject to certain conditions and requirements." Without commenting on the specific operational issues central to this proposal, we note that the Commission's final question on this subject is critical: "How can aeronautical mobile use of the 4.9 GHz band benefit public safety?"

In the case of Port Angeles, where public safety entities patrol the jurisdiction by land and sea, and face the added challenge of securing a water-route international port of entry, it is extremely likely that unmanned aircraft, along with light fixed-wing aircraft and helicopters, will find this air-to-ground link valuable in the work with local public safety agencies, and our daily working relationships with federal agencies such as the Coast Guard, Border Patrol, Customs, and the National Park Service at Olympic National Park; having interference-free access to the full 4.9 GHz spectrum among our operational groups will enhance interoperability and assures our combined forces of secure, area-wide land-to-air communications.

For that reason, we strongly support the Commission's proposal to permit easier access to 4.9 GHZ spectrum for aeronautical mobile uses—but, as with the terrestrial uses, we urge the Commission to reserve the spectrum solely for public safety uses.

In the section entitled “Standards” (¶64-67), the Commission discusses the pros and cons of establishing standards for this technology. As part of our implementation of the Port Angeles 4.9 GHz public safety network, our planners examined a wide range of open and proprietary solutions. While certain proprietary technologies, or open solutions provided by a limited number of vendors, might have provided enhanced operating performance, it was our view that the more open technology such as that based on the IEEE 802.11 standard provides the best trade-off between equipment selection, functionality, and cost. We chose to use this technology for our primary 4.9 GHz public safety network, as well as for the 2.4 GHz commercial network that we implemented with the public safety network, and the 5.8 GHz point-to-point backhaul used to interconnect the 40-plus fiber-optic network access points to the 240 wireless access points located in the city. This allows our public safety vehicles to communicate with our primary 4.9 GHz network and, at the same time, also communicate through commercially available 2.4 GHz access points. All our public safety vehicles are equipped with an onboard router that dynamically selects between the primary 4.9 GHz network that is pervasive throughout Port Angeles, 2.4 GHz (typically at fixed commercial sites), and both 3G and 4G commercial wireless services. This capability was added to improve interoperability with departments outside of the Port Angles service area and for public safety staff on temporary assignment. We anticipate that most of our operation will focus on the 4.9 GHz spectrum for normal day-to-day operation. The high data rates and fixed operating cost make it the preferred solution.

Based on our experience, we recommend that technology standards be adopted as a local option. This might be done as a part of the process of coordinating operating parameters within the public safety community. In other words, one of the parameters considered as part of licensing and coordination with adjacent and overlapping jurisdictions might be network

protocols and any bridging assets that permit interoperability with coordinating communities. In our own system, the city's central network management system controls and monitors not only the fire and police departments' mobile units, it also serves as the control center and network manager for mobile units operated by the Clallam County public safety agencies and the neighboring Lower Elwha Klallam Tribe.

CONCLUSION and CITY POSITION

Therefore, for the reasons set forth above, the City of Port Angeles urges the Commission to refrain from adopting rules that require registration of all base station facilities for users that have a primary focus of supporting mobile operation, restrict the dynamic assignment of operational channels with the 50 MHz bandwidth, or relax the eligibility for licensing of the 4.9 GHz public safety spectrum to non-public safety entries. We strongly support the Commission's proposal to allow aeronautical mobile use of the spectrum for public safety applications.

Respectfully submitted,

/s/

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